**Table S1.** **Crystallographic data and refinement statistics**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| Protein complex | Recombinant Ym1 | *Ex vivo* Ym1 | Recombinant Ym2 | *Ex vivo* Ym2 |
|  |  |  |  |  |
| **Data collection** |  |  |  |  |
|  X-ray source  (beamline) | SOLEIL(Proxima 1) | PETRA III(P14) | PETRA III(P14) | SLS(PXI) |
|  Wavelength (Å) | 0.97857 | 0.9763 | 0.9763 | 1.0000089224 |
|  Space group | *P21* | *P21* | *P21* | *P21* |
|  |  |  |  |  |
|  Cell dimensions |  |  |  |  |
|  *a*, *b*, *c* (Å) | 50.33,60.01,60.12 | 50.52,60.25,60.12 | 51.09,59.90,59.88 | 51.26,60.21,60.17 |
|  |  |  |  |  |
|  α, β, γ (°) | 90.00,94.66,90.00 | 90.00,94.48,90.00 | 90.00,94.14,90.00 | 90.00,94.24,90.00 |
|  |  |  |  |  |
|  Resolution (Å) | 50.00-1.79(1.90-1.79) | 59.93-1.42(1.50-1.42) | 59.90-1.17(1.24-1.17) | 42.50-1.70(1.81-1.70) |
|  |  |  |  |  |
|  |  |  |  |  |
|  *R*meas (%) | 24.7 (112.1) | 12.2 (138.2) | 8.0 (35.8) | 17.7 (136.4) |
|  |  |  |  |  |
|  < *I* /σ > | 5.28 (1.54) | 8.99 (1.19) | 15.12 (4.74) | 6.59 (0.96) |
|  |  |  |  |  |
|  CC ½ (%) | 97.9 (56.6) | 99.7 (39.5) | 99.9 (92.5) | 99.2 (35.8) |
|  |  |  |  |  |
|  Completeness (%) | 99.2 (96.0) | 98.1 (97.3) | 98.4 (95.9) | 97.7 (97.3) |
|  |  |  |  |  |
|  Redundancy | 4.1 (3.9) | 3.3 (3.3) | 6.8 (6.1) | 3.5 (3.4) |
|  ISa score | 8.04 | 26.18 | 27.31 | 24.20 |
|  Wilson B (Å2) | 20.318 | 20.936 | 12.048 | 24.584 |
|  |  |  |  |  |
| **Refinement** |  |  |  |  |
|  Resolution (Å) | 42.40-1.79 | 26.91-1.42 | 37.45-1.17 | 16.78-1.71 |
|  |  |  |  |  |
|  No. reflections | 33 407 | 66 944 | 119 181 | 39 026 |
|  |  |  |  |  |
|  *R*work / *R*free (%) | 17.29 / 19.86 | 18.10 / 20.52 | 15.75 / 16.73 | 17.71 / 20.48 |
|  |  |  |  |  |
|  No. non-H atoms |  |  |  |  |
|  Protein | 2 957 | 2 957 | 2 976 | 2 970 |
|  Ligand/ion | 10 | 4 | 24 | 6 |
|  Water | 215 | 163 | 584 | 239 |
|  |  |  |  |  |
|  *B*-factors (Å2) |  |  |  |  |
|  Protein | 12.09 | 15.58 | 10.28 | 18.50 |
|  Ligand/ion | 21.52 | 30.73 | 16.20 | 30.69 |
|  Water | 21.74 | 22.78 | 27.02 | 27.93 |
|  |  |  |  |  |
|  R.m.s. deviations |  |  |  |  |
|  Bond lengths (Å) | 0.008 | 0.010 | 0.010 | 0.010 |
|  Bond angles (°) | 0.91 | 0.98 | 1.07 | 0.97 |
|  |  |  |  |  |